

SECTION VII.—WEATHER AND DATA FOR THE MONTH.

THE WEATHER OF THE MONTH.

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PRESSURE.

The distribution of the mean atmospheric pressure over the United States and Canada, and the prevailing direction of the winds are graphically shown on Chart VII, while the average values for the month at the several stations, with the departures from the normal, are shown in Tables I and III.

For November as a whole the barometric pressure averaged above the normal throughout the United States, but in the central and extreme eastern Canadian Provinces it was somewhat below the average. The monthly means in the lower Missouri and central and northern Mississippi Valleys and to the northeastward averaged near the normal, and elsewhere the departures were not large, except that in the far Northwest the plus values were quite marked.

The month opened with relatively high pressure throughout practically all sections, except the New England States, New York, the northern portion of the Lake region, and the Florida Peninsula, where it was below the average. During the next few days low pressure obtained generally in the northern part of the country, but high readings continued throughout the South. The remainder of the first half of the month was marked by the successive passage across the country of several rather extensive and well-defined low and high pressure areas, while high pressure prevailed generally in the southeastern States. During the second half of the month the pressure continued relatively high for much of the time, except that in the early part of the third decade a rather extensive low pressure area moved from the far Southwest northeasterly to the Lake region and thence eastward, and an occasional low area crossed the northern border States and Canada.

The month closed with generally high pressure, except in the Atlantic coast States, the Lake region, the far Northwest, and practically all of Canada save the eastern Provinces, where it was below the average.

The distribution of the highs and lows was generally favorable for southerly winds in the Great Central Valleys, the lower Lake region and northeastern States, and northeasterly in the South Atlantic States, while in much of the Lake region, the upper Mississippi Valley, and the Central and Northern Plains region northerly and westerly winds were frequent during the month. Elsewhere variable winds prevailed.

TEMPERATURE.

At the beginning of November seasonable temperatures prevailed in most portions of the country, but by the 3d high temperatures for November overspread the Rocky Mountain and Plains States, and during the next few days there was a warming up in the Mississippi Valley. On the 6th cool weather appeared to the westward of the Rocky Mountains and in Montana, and on the 8th and 9th there was a decided fall of temperature in the west Gulf States and the Mississippi Valley. About

the 10th, a marked cold wave set in over the far Northwest, but its progress eastward was comparatively slow. The temperature for the first 12 days of November averaged slightly above the normal from the Rocky Mountain region westward and in the Upper Missouri Valley; but it was decidedly above the average in most of the eastern districts, specially in the middle Mississippi and the Ohio Valleys, the Lake region, and the southern Appalachian mountain district. On the 13th and 14th, with the advance of the cold wave above referred to, temperatures fell to readings unusually low for November in Wyoming, Montana, and most sections west of the Rockies. The cold wave reached the Atlantic coast about the 15th, and decidedly cold weather for the season occurred in the south Atlantic and east Gulf States. In the Gulf States west of Florida freezing temperatures were experienced at all points, save along the immediate coast. At the same time temperatures had somewhat moderated in the northern Plains region, and by the 19th they were seasonable generally over the country. The six-day period from November 13 to 18 averaged much colder than normal in almost all portions of the country, except the middle and upper Missouri Valley where the latter half of the period was quite warm. From the 21st to 23d, unseasonably high temperatures occurred from the Rio Grande Valley northeastward to Lake Michigan, but at the same time rather low readings obtained in the Rocky Mountain districts and the central and southern Plains States, which a little later was also the case in the Mississippi Valley, and they were below the seasonable average in eastern districts. The latter part of the month was marked by generally mild temperatures in most parts of the country. During the final 12 days in the region west of the Rocky Mountains the weather averaged slightly cooler than normal, and east of the Rockies warmer than the average, especially in northern districts.

The month as a whole averaged slightly warmer than normal in most districts east of the Rocky Mountains, save in Texas, but in the central valleys, Minnesota, and the Dakotas, the excess was rather marked. In the Rocky Mountain and Plateau States the month averaged cooler than normal, especially in Idaho, Nevada, Utah, Wyoming, and the Pacific States. At some time during the month freezing temperatures occurred in practically all sections of the country except the Florida Peninsula and along the immediate coast of Louisiana and Texas, and the middle and southern California coast.

PRECIPITATION.

Fair weather prevailed during the first few days of November in most portions of the country. About the 6th unsettled weather developed in the southern Plains region and overspread most sections to the northward and rather heavy rainfall occurred on the 8th and 9th at several stations from Kansas northeastward to Lake Michigan. About the 15th heavy rains occurred at many points in Florida, and from the 21st to 23d a storm moved from the Rio Grande Valley northeastward to the Great Lakes, causing widespread and generally heavy rains to the eastward and southeastward of its path.

During the closing days of the month overcast weather predominated in many eastern districts, with some generous rains in the Atlantic coast States from North Carolina to Maine, but fair weather, as a rule, prevailed west of the Mississippi.

The precipitation for the month, as a whole, was fairly plentiful over most of the Florida Peninsula, New England, and eastern New York, the southern Appalachian district and over a strip extending from central Texas northward and northeastward to the upper Lake region. It was moderate for the season in northern Idaho, the western portions of Washington and Oregon, but was considerably below the normal in most of California. Over large portions of the country the rainfall was light, especially so in the middle Gulf region, southern Georgia, the interior of the Carolinas, the upper Mississippi Valley, and most of the Plains region. In Arizona and southeastern California there was practically no rain, and it was scanty in New Mexico, most of Utah and Nevada, and in southern Idaho.

RELATIVE HUMIDITY.

The month, as a whole, was generally drier than the average over the greater portion of the country, except in relatively small areas in the central portions of the Rocky Mountain and Plains States, and parts of the Lake region, New England, and the Middle and South Atlantic States, where the relative humidity was near or somewhat above the normal. However, at many stations scattered irregularly throughout the country, the mornings were damper and the evenings drier than the respective averages.

GENERAL SUMMARY.

The weather of November, 1916, was favorable in all sections of the country for outdoor work, except that in the Southern States and eastern Oregon dry weather prevented plowing and seeding, while in California the cold weather hindered farm operations.

Winter wheat was reported in good condition in most northern sections, but growth was delayed throughout much of the southern part of the country by lack of moisture. However, the rains during the latter part of the month were beneficial in the Southern States, and planting, previously delayed by dry weather, made good progress. The growth of most winter grain was retarded somewhat in the lower Mississippi Valley by the freeze of the middle of the month.

Except in South Carolina, cotton was practically all harvested, conditions for this work being favorable during most of the month. Cold weather damaged potatoes in Mississippi, Louisiana, Colorado, Washington, and Oregon, and apples in Colorado, Washington, and Oregon. It also severely injured truck in practically all Southern States, and sugar cane in the same region to some extent.

The weather was favorable for ripening citrus fruit in Arizona, but frost during the second decade of the month caused serious damage to the olives in California, and in some parts of the State to citrus fruit. Satsuma oranges were uninjured in Alabama, but were damaged in Mississippi by the cold wave of the middle of the month, and about 20 per cent of the citrus fruit in Texas was injured.

Average accumulated departures for November, 1916.

Districts.	Temperature.			Precipitation.			Cloudiness.		Relative humidity.	
	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure from the normal.	General mean for the current month.	Departure from the normal.
New England.....	39.1	-0.2	-4.5	2.44	-1.0	-4.80	5.6	-0.2	74	-4
Middle Atlantic.....	45.9	+1.3	+7.6	1.74	-1.1	-5.80	4.5	-0.5	70	-5
South Atlantic.....	55.9	+1.8	+11.0	1.36	-1.6	-11.80	3.5	-1.0	74	-4
Florida Peninsula.....	71.0	+0.4	-1.4	2.73	+0.5	-12.60	4.6	+0.1	75	-5
East Gulf.....	56.9	+1.3	+8.9	2.15	-1.4	-2.60	3.1	-1.5	69	-7
West Gulf.....	56.9	+0.5	+13.2	2.15	-1.0	-6.80	3.2	-1.4	68	-6
Ohio Valley and Tennessee.....	47.1	+2.5	+4.2	1.64	-1.8	-2.40	3.1	-2.0	68	-5
Lower Lakes.....	39.9	+0.8	+0.9	1.81	-1.2	-3.30	6.2	-1.1	74	-3
Upper Lakes.....	35.7	+1.7	+2.5	1.81	-0.6	+1.90	6.9	-0.2	78	-2
North Dakota.....	29.2	+4.6	-13.0	0.18	-0.6	-0.50	4.8	-0.6	75	-4
Upper Mississippi Valley.....	40.9	+3.2	+6.2	1.60	-0.4	-1.60	4.9	-0.5	72	-2
Missouri Valley.....	40.9	+3.5	+10.9	1.35	+0.1	-5.80	3.9	-1.0	68	-3
Northern slope.....	30.4	-1.6	-13.0	0.59	-0.2	+0.20	4.6	-0.2	66	-1
Middle slope.....	42.8	+1.1	+5.1	1.16	+0.2	-3.90	3.0	-0.9	65	+3
Southern slope.....	49.7	-1.3	+14.1	0.48	-0.7	-4.70	2.6	-2.6	59	-8
Southern Plateau.....	47.2	-1.8	-5.2	0.12	-0.5	+1.00	1.6	-1.2	43	0
Middle Plateau.....	35.2	-4.3	-10.1	0.32	-0.6	+0.80	2.9	-1.0	54	-4
Northern Plateau.....	34.3	-4.4	-20.9	1.29	-0.1	+0.70	5.7	-0.4	60	-8
North Pacific.....	43.4	-2.1	-9.8	5.90	-1.4	-9.70	6.1	-1.4	80	-4
Middle Pacific.....	50.2	-2.8	-5.8	1.46	-1.7	-1.80	3.6	-0.9	63	-12
South Pacific.....	55.4	-1.6	-6.2	0.20	-1.1	+4.80	2.9	-0.8	64	-3

WEATHER CONDITIONS ON THE NORTH ATLANTIC OCEAN DURING NOVEMBER, 1915.

The data presented are for November, 1915, and comparison and study of the same should be in connection with those appearing in the REVIEW for that month. Chart IX (XLIV-142) shows for November, 1915, the averages of pressure, temperature, and the prevailing direction of the wind at 7 a. m., 75th meridian time (Greenwich mean noon), together with the locations and courses of the more severe storms of the month.

PRESSURE.

The distribution of the average pressure for the month, as shown on Chart IX, presents some unusual features. There was only a trace of the usual North Atlantic or Azores HIGH, although a small area of high pressure, with a crest of 30.05 inches, existed near the position normally occupied by this center of action, with its normal crest of 30.15 inches. The continental HIGH, with a crest of 30.15 inches, was slightly south of its usual position, the isobar of 30.1 inches passing between the south coast of Florida and Cuba and extending as far east as the 69th meridian. There was a well-developed LOW, with average minimum pressure of 29.75 inches, near latitude 55° N., longitude 46° W., but it was considerably south and west of the usual position of the Icelandic LOW. There were indications of a second LOW in the vicinity of the Scandinavian Peninsula, although the center was apparently outside the limits of the chart.

The mean monthly pressure gradient between the higher and lower latitudes was somewhat less than usual, although in many localities the changes in barometric readings from day to day were abnormal. In the 5-degree square between latitudes 30°-35° and longitudes 25°-30° the lowest barometer reading during the month